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EXAMINER	
WILSON, ROBERT W	
ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/905,067	ACHARYA, YATIN	
	Examiner	Art Unit	
	ROBERT W. WILSON	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The examiner appreciates receipt of the Infini Band Protocol specification. The examiner suggests that the applicant submit an IDS with this document listed on the form so that the this document can be recorded as being reviewed on the record.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-2, 7-8, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable in view of Benayoun (U.S. Patent No.: 6,499,061) in view of Fan (U.S. Patent No.: 6,643,269)

Referring to claim 1, Benayoun teaches: a method (Method performed per Fig 1) comprising:

Selecting by a network manager a tag to be used for switching data packets traversing a network (If the packet received does not have a defined label then the receiving switching node or network manager classifies packet based upon information in the destination address, source address, etc and stores the label determined in its table. A default label is added and the second switch receiving the default label goes through the same classification process and determines of selects a label or tag and stores the label in its table per col. 2 line 66 to col. 3 line 67) each of the packet having a header with content (Each of the packets shown in Fig 1 has a header and payload. The header contains destination address, source address, etc or content per col. 2 line 66 to col. 3 line 67)

Configuring by the network manager each network switch of the network to switch each of the data packets based on a corresponding switching tag added to a start of a corresponding data packet and the switching tag having a selected size, without altering the content of the header (The first switch or network manager configures each of the downstream switches by sending the packet with a default label so the downstream switch can also determine the tag or label which is stored in its table per col. 2 line 66 to col. 3 line 67. The label or tag is added to the start of the packet as shown in Figure 1 and because the label is added in front of the packet which contains both header and payload as shown in Figure 1 the content of the header is not altered.)

Benayoun does not expressly call for: detecting nodes on a network by a network manager and selecting a size of address fields to be used for switching data packets traversing the network based on a number of the detected network nodes

Fan teaches: detecting nodes on a network by a network manager (general topology discovery for a virtual network per col. 4 line 44 to col. 6 line 67) selecting a size of address fields to be used for switching data packets traversing the network based on a number of the detected network nodes (The size of an address can be varied based upon the number of nodes in the network per col. 5 lines 15 to col. 6 line 67

It would have been obvious to one of ordinary skill in the art at the time of the invention to adding detecting nodes on a network by a network manager and varying the size of the address of Fan to the size of tag of Benanyoun in order to build a system which utilizes tags based upon the number of nodes in the network which will result in a faster switching time.

In addition Benayoun teaches:

Regarding claim 2, wherein the configuring step includes sending a management datagram to each network switch the management data gram specifying that the switching is to based on the switching tag and the selected size of the switching tag (The first switch sends the packet with the default label which the examiner interprets as a datagram per col. 2 line 66 to col. 3 line 67)

Referring to claim 7, Benayoun teaches: a network manager (Classifying switching node per col. 2 line 66 to col. 3 line 67)

A controller configured for selecting a tag to be used for switching data packets traversing the network to be used for switching data packets traversing the network (If a packet does not have a defined tag. The switching node or controller classifies packet based upon information in the destination address, source address, etc and adds a label or tag to its table which is used to switch data packets traversing the network. The switching node adds a default tag to the packet and forwards to a second switching node and the second switch goes through the same process to determine the tag or label which is stored in its table per col. 2 line 66 to col. 3 line 67) each data packet having a header with content (Each of the packets shown in Fig 1 has a header and payload. The header contains destination address, source address, etc or content per col. 2 line 66 to col. 3 line 67)

The controller configuring each network switch to switch each data packet corresponding to a switching tag of the data packet without altering the content of the header (The first switch or network manager configures each of the downstream switches by sending the packet with a default label so the downstream switch can also determine the tag or label which is stored in its table per col. 2 line 66 to col. 3 line 67. The label or tag is added to the start of the packet as shown in Figure 1 and because the label is added in front of the packet which contains both header and payload as shown in Figure 1 the content of the header is not altered. Master CPU or controller sends a status message to the network nodes (12 & 14 per Fig 1) stating the status of

the network and inherently synchronizing the size of the field in the header based number of network nodes)

Benayoun does not expressly call for: An explorer resource configured for detecting network nodes on the network and selecting a size of address fields to be used for switching data packets traversing the network based on a number of the detected network nodes

Fan teaches: An explorer resource configured for detecting network nodes on the network (general topology discovery for a virtual network per col. 4 line 44 to col. 6 line 67) selecting a size of address fields to be used for switching data packets traversing the network based on a number of the detected network nodes (The size of an address can be varied based upon the number of nodes in the network per col. 5 lines 15 to col. 6 line 67

It would have been obvious to one of ordinary skill in the art at the time of the invention to add an explorer resource configured for detecting network nodes on the network and varying the size of the address of Fan to the size of tag of Benayoun in order to build a system which utilizes tags based upon the number of nodes in the network which will result in a faster switching time.

In addition Benayoun teaches:

Regarding claim 8, wherein the configuring step includes sending a management datagram to each network switch the management data gram specifying that the switching is to based on the switching tag and the selected size of the switching tag (The first switch sends the packet with the default label which the examiner interprets as a datagram per col. 2 line 66 to col. 3 line 67)

Referring to claim 10, Benanyoun teaches: a network within a server system comprising a plurality of nodes (Fig 1)

Plurality of network switches (plurality of switching nodes per col. 2 line 66 to col. 3 line 67)

Network manager configured to select a tag to be used for switching data packets (If the packet received does not have a defined label then the receiving switching node or network manager classifies packet based upon information in the destination address, source address, etc and stores the label determined in its table. A default label is added and the second switch receiving the default label goes through the same classification process and determines of selects a label or tag and stores the label in its table per col. 2 line 66 to col. 3 line 67) each of the packet having a header with content (Each of the packets shown in Fig 1 has a header and payload. The header contains destination address, source address, etc or content per col. 2 line 66 to col. 3 line 67)

The network manager configured for configuring the network switches to switch each of the data packets based on a corresponding switching tag added to a start of a corresponding data packet (The first switch or network manager configures each of the downstream switches by sending the packet with a default label so the downstream switch can also determine the tag or label which is stored in its table per col. 2 line 66 to col. 3 line 67. The label or tag is added to the start of the

packet as shown in Figure 1 and because the label is added in front of the packet which contains both header and payload as shown in Figure 1 the content of the header is not altered.) each network switching a received data packet based on the corresponding switching tag without altering the content of the header (Each of the switching nodes receives the packet shown in Figure 1 which includes both a header and payload and perform label switching on the packets without altering the packet which contains the header; therefore, without altering the content of the header)

Benayoun does not expressly call for: detecting nodes on a network by a network manager and selecting a size of address fields to be used for switching data packets traversing the network based on a number of the detected network nodes

Fan teaches: detecting nodes on a network by a network manager (general topology discovery for a virtual network per col. 4 line 44 to col. 6 line 67) selecting a size of address fields to be used for switching data packets traversing the network based on a number of the detected network nodes (The size of an address can be varied based upon the number of nodes in the network per col. 5 lines 15 to col. 6 line 67

It would have been obvious to one of ordinary skill in the art at the time of the invention to adding detecting nodes on a network by a network manager and varying the size of the address of Fan to the size of tag of Benanyoun in order to build a system which utilizes tags based upon the number of nodes in the network which will result in a faster switching time.

Referring to claim 11, the combination of Benayoun and Fan teach: the network of claim 11.

Benayoun does not expressly call for: wherein the size corresponds to a selected number of bits

Fan teaches: wherein the size corresponds to a selected number of bits (A shortened address which corresponds to a selected number of bits per col. 3 line 6 or col. 4 line 7)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add wherein the size corresponds to a selected number of bits of Fan to the network of the combination of Fan and Benayoun in order to build a system which utilizes tags based upon the number of nodes which will result in a faster switching time.

Referring to claim 12, the combination of Benayoun and Fan teach: the network of claim 11.

Benayoun does not expressly call for: wherein each network switch is configured for generating address table entries based on the selected size

Fan teaches: wherein each network switch is configured for generating address table entries based on the selected size (look up table per col., 7 line 11-67 or col. 8 line 55-col. 10 line 67)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add wherein each network switch is configured for generating address table entries based on the selected size of Fan to the network of the combination of Fan and Benayoun in order to build a system which utilizes tags based upon the number of nodes which will result in a faster switching time.

4. Claims 3-6, 9, 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Benayoun (U.S. Patent No.: 6,499,061) in view of Fan (U.S. Patent No.: 6,643,269) further in

view of Chui (U.S. Patent Pub No.: US2002/0165978)

Referring to claim 3, the combination of Benayoun and Fan teaches: the method of claim 1 and wherein detecting step and configuring step include access the network according to a network protocol (label is added to packet which is based upon a protocol per Fig 1)

Benayoun does not expressly call for: Infiniband network protocol

Chui teaches: Infiniband network protocol (packets per Pg 6 Para [0195])

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the Infiniband packet (Infiniband Network Protocol) of Chui in place of the packet of the combination of Benayoun and Fan because Infiniband packet is another type of packet in which label switching could be utilized in order to more quickly switch the packets between switches without looking up a destination address.

In addition Benayoun teaches:

Regarding to claim 4, the combination of Fan, Benayoun, and Chui teach: the method of claim 3 and Infiniband packet with label based upon size Benayoun teaches: receiving by a first of the network switches a packet having a destination local identifier specifying a destination node on the network (12 per Fig 1 receives a packet with a destination address for a node which per col. 3 lines 6-12)

Adding by the first network switch a new switching tag on the start of the packet having a selected size and specifying the destination node based on the DLID and switching the packet having the new switching tag to a second of the network switches based on the switching tag having a new switching tag to a second network switch (12 per Fig 1 or first network switch adds new a label or flow identifier based upon a destination address and switches the packet with the new switching tag to 14 or second switch based on the new switching tag per col. 3 line 15 to 22)

Regarding claim 5, the combination of Fan, Benyoun, and Chui teach: the method of claim 4 and Infiniband packet & Benayoun teaches: receiving the new switching tab by the second network switch selectively removing by the second network switch the new switching tag from the

packet based on whether the new switching tag specifies a destination node reachable by the second network switch and selectively output the packet following removal of the new switching tag to the destination based on the destination node being reachable by the second network switch (14 per Fig 1 (second network switch) receives the packet with the label and removing the new switching tag from the packet based on whether the new switching tag specifies a destination anode is reachable by the corresponding node (14 per Fig 1 (second network switch) receives the packet with the label and removes the label or tag and adds another label or tag based upon whether the destination address of the packet is reachable by 12 per Fig 1 and per col. 3 lines 6 to 67)

Regarding claim 6, the combination of Benayoun, Fan, and Chui teach: the method of claim 5 and Infiniband packet Benayoun teaches: further comprising selectively outputting by the second network switch the packet including the new switching tag to a third of the network switches based on a determined unreachability of the destination node by the second network switch (14 per Fig 1 (second network switch) receives the packet with the label and removes the label or tag and adds another label or tag based upon whether the destination address of the packet is reachable by 12 per Fig 1 and per col. 3 lines 6 to 67)

Referring to claim 9, the combination of Benayoun and Fan teach: the network manager of claim 7 as well as a network packet protocol and Fan teaches wherein the explore resource and controller or for access the network according to a network protocol (col. 10 lines 41 to 52 and col. 2 lines 8 to 24)

The combination of Fan and Benayoun do not expressly call for: Infiniband Network protocol.

Chui teaches: Infiniband Network Protocol (Infiniband packets which utilize Infiniband Network protocol. per Pg 6 Para [0195])

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the Infiniband packets or protocol of Chui in place of the packet of Fan and Benayoun because Infiniband packet is another type of packet in which label switching could be utilized in order to more quickly switch the packets between switches without looking up a destination address

Referring to claim 13, the combination of Benayoun & Fan teaches: the method of 11 and wherein detecting step and configuring step include access the network according to a network protocol (label is added to packet which is based upon a protocol per Fig 1)

The combination of Benayoun and Fan do not expressly call for: Infiniband Network Protocol

Chui teaches: Infiniband Network Protocol (Infiniband packets which utilize Infiniband Network protocol. per Pg 6 Para [0195])

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the infiniband packet of Chui in place of the packet of the combination of Fan and Benayoun because Infiniband packet is another type of packet in which label switching could be utilized in order to more quickly switch the packets between switches without looking up a destination address.

In addition Benayoun teaches:

Regarding to claim 14, the combination of Fan, Benayoun, and Chui teach: the network of claim 11 and Infiniband packet with label based upon size Benayoun teaches: receiving by a first of the network switches a packet having a destination local identifier specifying a destination node on the network (12 per Fig 1 receives a packet with a destination address for a node which per col. 3 lines 6-12)

Adding by the first network switch a new switching tag on the start of the packet having a selected size and specifying the destination node based on the DLID and switching the packet having the new switching tag to a second of the network switches based on the switching tag having a new switching tag to a second network switch (12 per Fig 1 or first network switch adds new a label or flow identifier based upon a destination address and switches the packet with the new switching tag to 14 or second switch based on the new switching tag per col. 3 line 15 to 22)

Regarding claim 15, the combination of Fan, Benyoun, and Chui teach: the network of claim 14 and Infiniband packet & Benayoun teaches: receiving the new switching tab by the second network switch selectively removing by the second network switch the new switching tag from the packet based on whether the new switching tag specifies a destination node reachable by the second network switch and selectively output the packet following removal of the new switching tag to the destination based on the destination node being reachable by the second network switch (14 per Fig 1 (second network switch) receives the packet with the label and removing the new switching tag from the packet based on whether the new switching tag specifies a destination anode is reachable by the corresponding node (14 per Fig 1 (second network switch) receives the packet with the label and removes the label or tag and adds another label or tag based upon whether the destination address of the packet is reachable by 12 per Fig 1 and per col. 3 lines 6 to 67)

Response to Amendment

5. Applicant's arguments filed 2/7/08 have been fully considered but they are not persuasive.

The examiner respectfully disagrees with the applicant's argument that the combination of Benanyoun and Fan do not teach: "selecting a tag without altering the content of a header with a tag size" and " prescribed number of bits of an address field of a network"

Benanyoun teaches: selecting a tag without altering the content of a header with a tag size (The classifying switch or management node classifies the packet based upon information in the header and adds a tag which is a fixed value as shown in Figure 1 without altering the packet. It should be noted that the packet shown in Figure 1 contains both header and payload so adding the label has no affect on the header)

Fan teaches: prescribed number of bits of an address field of a network (The size of an address can be varied based upon the number of nodes in the network per col. 5 lines 15 to col. 6 line 67

It would have been obvious to one of ordinary skill in the art at the time of the invention to add varying the size of the address of Fan to the size of tag of Benanyoun in order to build a system which utilizes tags based upon the number of nodes in the network which will result in a faster switching time.

Conclusion

6, Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT W. WILSON whose telephone number is (571)272-3075. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571/272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert W Wilson/
Primary Examiner, Art Unit 2619

4/1/08